

What is claimed is:

1. An antithrombotic agent comprising, as an active ingredient, a monoclonal antibody which has reactivity with human von Willebrand factor, which has action to inhibit RIPA (ristocetin-induced platelet aggregation), BIPA (botrocetin-induced platelet aggregation), and SIPA (shear stress-induced platelet aggregation) of human platelet, and which does not express bleeding action in an medicinally effective dose to exhibit antithrombotic action.

2. The antithrombotic agent according to claim 1, wherein the monoclonal antibody is a monoclonal antibody produced by a hybridoma formed by fusion between mouse myeloma cell and spleen cell of a mouse immunized with human von Willebrand factor.

3. The antithrombotic agent according to claim 2, wherein the hybridoma is AJvW-1, AJvW-2, AJvW-3, AJvW-4, or a variant of any of them.

4. A monoclonal antibody having the following properties:

(a) the monoclonal antibody has reactivity with human von Willebrand factor;

(b) the monoclonal antibody inhibits RIPA (ristocetin-induced platelet aggregation), BIPA (botrocetin-induced platelet aggregation), and SIPA (shear stress-induced platelet aggregation) of human platelet;

(c) the monoclonal antibody inhibits RIPA (ristocetin-induced platelet aggregation) and BIPA (botrocetin-induced platelet aggregation) of guinea pig platelet; and

5 (d) the monoclonal antibody exhibits strong antithrombotic action in vivo in guinea pig, but it does not cause bleeding.

10 5. The monoclonal antibody according to claim 4, which is produced by a hybridoma formed by fusion between mouse myeloma cell and spleen cell of a mouse immunized with human von Willebrand factor.

6. The monoclonal antibody according to claim 5, wherein the hybridoma is AJvW-2, AJvW-4, or a variant of any of them.

15 7. A monoclonal antibody having the following properties:

(A) the monoclonal antibody has reaction specificity for human von Willebrand factor;

20 (B) the monoclonal antibody inhibits RIPA (ristocetin-induced platelet aggregation), BIPA (botrocetin-induced platelet aggregation), and SIPA (shear stress-induced platelet aggregation) of human platelet; and

25 (C) the monoclonal antibody does not react with von Willebrand factors of rat, guinea pig, and rabbit.

8. The monoclonal antibody according to claim 7, which is produced by a hybridoma formed by fusion

between mouse myeloma cell and spleen cell of a mouse immunized with human von Willebrand factor.

9. The monoclonal antibody according to claim 8, wherein the hybridoma is AJvW-1, AJvW-3, or a variant of any of them.

10. A monoclonal antibody which has reactivity with human vWF factor, and which has action to inhibit binding between the monoclonal antibody as defined in claim 6 or 9 and vWF factor when the monoclonal antibody is allowed to co-exist with the monoclonal antibody as defined in claim 6 or 9.

11. A hybridoma for producing the monoclonal antibody as defined in claim 5, which is formed by fusion between Sp2/O-Ag14 mouse myeloma cell and spleen cell of a mouse immunized with von Willebrand factor.

12. The hybridoma according to claim 11, which is AJvW-2, AJvW-4, or a variant of any of them.

13. A hybridoma for producing the monoclonal antibody as defined in claim 8, which is formed by fusion between Sp2/O-Ag14 mouse myeloma cell and spleen cell of a mouse immunized with von Willebrand factor.

14. The hybridoma according to claim 13, which is AJvW-1, AJvW-3, or a variant of any of them.

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